CLAIMS:

1. A portable electronic apparatus comprising:

a first vibrating transducer comprising a first resilient support, and a first mass supported by the first resilient support forming a first mechanical resonator that is characterized by a first full width at half max;

an electrical circuit coupled to the first vibrating transducer, and adapted to apply a drive signal that includes substantial spectral energy distributed throughout at least a substantial portion of the first full width at half max.

2. The portable electronic apparatus according to claim 1 wherein:

the electrical circuit is adapted to apply a drive signal that includes a plurality of signal components, to the first transducer, wherein the plurality of signal components are characterized by plural frequencies within the first full width at half max of the first transducer.

3. The portable electronic apparatus according to claim 1 further comprising:

a second vibrating transducer coupled to the electrical circuit for receiving the drive signal, the second transducer comprising a second resilient support, and a second mass supported by the second resilient support forming a second mechanical resonator that is characterized by a second full width at half max.

4. The portable electronic apparatus according to claim 3 wherein:

the first full width a half max overlaps the second full width at half max.

5. The portable electronic apparatus according to claim 3 wherein:

the electrical circuit is adapted to apply a multi-sine to the first transducer and the second transducer.

6. A portable electronic apparatus comprising:

a vibrating transducer comprising a mass, a resilient support supporting the mass and a transducer motor coupled to the mass and adapted to impart motion to the mass in response to electrical signals applied to the transducer motor;

an electrical circuit coupled to the transducer motor, wherein the electrical circuit is adapted to apply an oscillating signal that is characterized by a first maximum amplitude during a first period of time, and is characterized by a second maximum amplitude during a second period of time that follows the first period of time, that is less than the first maximum amplitude.

7. The portable electronic device according to claim 6 wherein:

the transducer is characterized by a maximum steady state amplitude handling capacity; and

the first maximum amplitude exceeds the maximum steady state amplitude handling capacity.

8. The portable electronic device according to claim 6 wherein:

the electrical circuit is adapted to apply an oscillating signal that is characterized by an approximately exponentially decaying envelope.

9. A portable electronic apparatus comprising:

a plurality of vibration transducers each comprising a mass, and a transducer motor coupled to the mass and adapted to impart motion to the mass in response to electrical signals applied to the transducer motor;

an electrical circuit coupled to each transducer motor, wherein the electrical circuit is adapted to apply a multi-sine signal to each transducer motor.

10. The portable electronic apparatus according to claim 11 wherein:

the electrical circuit is adapted to apply an amplitude modulated multi-sine signal to each transducer.

11. The portable electronic apparatus according to claim 10 wherein:

the electrical circuit is adapted to apply a multi-sine that, considered without any predetermined applied amplitude modulation, is characterized by a crest factor of less than 0.5 dB.

12. A method of operating a resonant tactile vibration transducer, the method comprising:

for each of a succession of signal periods, applying a period of signal that is characterized by an amplitude that is about a maximum amplitude that can be applied for that signal period without overdriving the resonant tactile vibration transducer.